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EXAMINER

WONG, BLANCHE

ART UNIT	PAPER NUMBER
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2667

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DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,490

Applicant(s)

REFAI ET AL.

Examiner

Blanche Wong

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date #2,3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claims 12 and 13** are objected to because of the following informalities: missing word.

Examiner suggests adding the word "identified" to both claims 12 and 13. Claim 12, ln. 3, and claim 13, ln. 3 should read – the identified second radio configuration --.

Appropriate correction is required.

2. **Claims 17 and 43** are objected to because of the following informalities: incorrect wording.

Examiner suggests changing the word "supported by" in claim 17, ln. 3, and in claim 43, ln. 3 to – available for – as recited in claims 14 and 40 respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 2,3,15,16,20,21,25,26,37,38,41,42** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claims 2,3,15,16,25,26,37,38,41,42, it is unclear what is a first one and a second one of a first and second sets of radio configurations.

5. **Claims 20 and 21** recite the limitation "first and second signals" in ln. 3 and ln. 2 respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1,7,10-13,14,17,23,24,29,32,35,36,40,43** are rejected under 35 U.S.C. 102(b) as being anticipated by Hottinen et al. (U.S. Pat NO. 6,611,507).

With regard to claims 1,24,32,36, Hottinen discloses

communicating between the wireless terminal (mobile station MS 508) and a first node (a first base station is a CDMA/FDD base station, col. 7, ln. 61-62) according to a first radio configuration of a first set of radio configurations supported by the first node;

identifying (a handoff procedure, col. 7, ln. 47-48) a second radio configuration (TDD protocol, col. 7, ln. 49) available for a second node (a second base station is a CDMA/TDD base station, col. 7, ln. 62-63) that supports a second set of radio configurations that is different from the first set of radio configurations; and

simultaneously communication (see handoff region at t=1 in Fig. 5; col. 7, ln. 11-45) between the wireless terminal (mobile station MS 508b) and respective ones of the first and second nodes (a first base station is a CDMA/FDD base station, and a second

base station is a CDMA/TDD base station, col. 7, ln. 61-63) according to the identified second radio configuration (handoff synchronization 608, col. 8, ln. 11-15), as recited in claim 1.

With regard to claims 7,23,29, Hottinen also discloses CDMA. Col. 7, ln. 61-63.

With regard to claim 10, Hottinen also discloses a predetermined power threshold (a predetermined criterion). Col. 8, ln. 58-60.

With regard to claims 11 and 12, Hottinen also discloses a mobile station handoff request is sent from the mobile station to the "new" base station (preceded by requesting communication according to the second radio configuration from the wireless terminal)(preceded by commanding the wireless terminal to communicate according to the second radio configuration). Col. 8, ln. 61-62.

With regard to claim 13, Hottinen also discloses a complete and completed handoff (followed by terminating communications between the wireless terminal and the first node while continuing communications between the wireless terminal and the second node). Col. 9, ln. 47-51.

With regard to claims 14 and 40, Hottinen also discloses a predetermined signal, the pilot search signal 700, that distinguishes itself from other pilot signals by using a signal of a particular phase or frequency and in one embodiment, a pilot signal is one

Art Unit: 2667

that is sufficiently high in power (determining whether a common radio configuration is available for the first and second base stations) (col. 8, ln. 30-48.) Hottinen also discloses the mobile station will continue to operate in the multirate mode until the handoff is complete (handing off the wireless terminal from the first base station to the second base station based on the determination of whether a common radio configuration is available for the first and second base station) (col. 8, ln. 45-col. 9, ln. 51).

With regard to claims 17,35,43, Hottinen also discloses "soft handoff", which is a call state where two or more base stations support a mobile station (means for performing a soft handoff of the wireless terminal using the common radio configuration) (col. 3, ln. 3-4).

With regard to claim 30, Hottinen also discloses the first node comprises a base station (a first base station is a CDMA/FDD base station, col. 7, ln. 61-62).

With regard to claim 31, Hottinen also discloses the radio configuration control circuit is positioned at a mobile switching center 510 (MSC provides an interface, col. 7, ln. 32).

With regard to claim 32, Hottinen also discloses the mobile station operates in a multirate mode until the handoff is complete (it is inherent that there is some radio

Art Unit: 2667

configuration control circuit coupled to the transceiver circuit and operative to cause the transceiver circuit to communicate with a first node using first radio configuration of the set of radio configurations, to identify a second radio configuration of the set of radio configurations supported by a second node, and to responsively cause the transceiver circuit to simultaneously communicate with respective ones of the first and second nodes according to the second radio configuration) (col. 8, ln. 45-col. 9, ln. 51).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 2,15,25,37,39,41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of Park et al. (U.S. Pat No. 6,704,581).

With regard to claims 2,15,25,37,41, Hottinen discloses the method and system according to claims 1 and 36. However, Hottinen fails to explicitly show a first one of the first and second sets of radio configurations is constrained to radio configurations that are compliant with a wireless communications standard, and wherein a second one of the first and second sets of radio comprises radio configurations compliant with the wireless communications standard and radio configurations that are non-compliant with the wireless communications standard.

In an analogous art, Park discloses a handoff from an asynchronous base station (a first one) such as W-CDMA (a first one of the first and second sets of radio configurations is constrained to radio configurations that are compliant with a wireless communications standard) to a synchronous base station (a second one) based on IS-95 or IS-2000 (a second one of the first and second sets of radio comprises radio configurations compliant with the wireless communications standard and radio configurations that are non-compliant with the wireless communications standard). Col. 4, ln. 16-21.

A person of ordinary skill in the art would have been motivated to employ Park in Hottinen in order to have two wireless communications standards. The suggestion/motivation to do so would have been to provide a mobile telecommunication system for performing a handoff from an asynchronous communication system to a synchronous communication system by using information associated with a neighboring synchronous base station. Park, col. 2, ln. 61-65. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Park and Hottinen to obtain the invention as specified in claims 2,15,25,37,41.

With regard to claims 39, Hottinen also discloses CDMA. Col. 7, ln. 61-63.

10. **Claims 3,16,26,38,42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of TenBrook et al. (U.S. Pat No. 5,999,815).

With regard to claims 3,16,26,38,42, Hottinen discloses the method and system according to claim 1. However, Hottinen fails to explicitly show a first one of the first and second sets of radio configurations is constrained to IS-95 compliant radio configurations, and wherein a second one of the first and second sets of radio configurations includes IS-2000 compliant radio configurations that are non-compliant with IS-95.

In analogous art, TenBrook discloses a first air-interface that is compatible with IS-95, col. 3, ln. 32-34, and a second air interface that is compatible with CDMA 2000, col. 3, ln. 34-36 (also known as IS-2000) (a first one of the first and second sets of radio configurations is constrained to IS-95 compliant radio configurations, and wherein a second one of the first and second sets of radio configurations includes IS-2000 compliant radio configurations that are non-compliant with IS-95).

A person of ordinary skill in the art would have been motivated to employ TenBrook in Hottinen in order to obtain air-interface that will overcome the differences between IS-95 and CDMA 2000. Col. 1, ln. 20-24. The suggestion/motivation to do so would have been to provide a wireless communication system for implementing diversity for a dual-mode communication unit between systems having dissimilar air-interfaces. TenBrook, col. 1, 46-48. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine TenBrook and Hottinen to obtain the invention as specified in claim 3,16,26,38.

11. **Claims 4 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of Kanerva et al. (U.S. Pat No. 6,493,554).

With regard to claims 4 and 19, Hottinen discloses a method of claim 1. However, Hottinen fails to expressly show simultaneously communication between the wireless terminal and respective ones of the first and second nodes according to the identified second radio configuration using common channel coding, as recited in claim 4.

In an analogous art, Kanerva discloses common channel coding in a handover. Col. 7, ln. 19-30.

A person of ordinary skill in the art would have been motivated to employ Kanerva in Hottinen in order to obtain common channel coding. The suggestion/motivation to do so would have been to provide an optimal way of performing handover. Kanerva, col. 3, ln. 40-41. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Kanerva and Hottinen to obtain the invention as specified in claim 4.

12. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen and Kanerva as applied to claim 4 above, and further in view of Bender (U.S. Pat No. 6,253,085).

With regard to claims 5 and 6, the combination of Hottinen and Kanerva discloses a method according to claim 4. However, the combination fails to explicitly show receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal; and processing the first and second signals according to a common process, as recited in claim 5; and wherein receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal comprises receiving a composite signal including the first and second signals; and wherein processing the first and second signals according to a common process comprises processing the composite signal according to a RAKE process, as recited in claim 6.

In an analogous art, Bender discloses a rake receiver to demodulate two separate signals from two different base station and the two signals are combined to yield a composite signal (receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal; and processing the first and second signals according to a common process; and wherein receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal comprises receiving a composite signal including the first and second signals; and wherein processing the first and second signals according to a common process comprises processing the composite signal according to a RAKE process) (col. 1, ln. 27-30).

A person of ordinary skill in the art would have been motivated to employ Bender in Hottinen and Kanerva in order to obtain a receiver receiving two signals and a

common process using RAKE. The suggestion/motivation to do so would have been to provide a smooth soft handoff and better quality signal. Bender, col 1, ln. 24-36. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Bender and Hottinen and Kanerva to obtain the invention as specified in claims 5 and 6.

13. **Claims 8,9,18,27,28,33,34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of Czaja et al. (U.S. 6,567,666).

With regard to claims 8 and 9, Hottinen discloses the method according to claim 1. However, Hottinen fails to explicitly show wherein the first node supports a first set of radio configurations and wherein the second node supports a second set of radio configurations that includes only a subset of first set of radio configurations, as recited in claim 8; and wherein the first node supports a first set of radio configurations, wherein the second node supports a second set of radio configurations, and wherein the first set of radio configurations includes only a subset of the second set of radio configurations, as recited in claim 9.

In an analogous art, Czaja discloses wherein the first node (IS-95) supports a first set of radio configurations (RS-1 and RS-2, col. 6, ln. 25) and wherein the second node (IS-2000) supports a second set of radio configurations (RC-1 to RC-5, col. 6, ln. 26) that includes only a subset (SHO between RS-1 and RC-1, and RS-2 and RC-2, col. 6, ln. 28) of first set of radio configurations (RS-1 and RS-2, col. 6, ln. 25), as recited in claim 8; and wherein the first node (IS-2000) supports a first set of radio configurations

Art Unit: 2667

(RC-1 to RC-5, col. 6, ln. 26), wherein the second node (IS-95) supports a second set of radio configurations (RS-1 and RS-2, col. 6, ln. 25), and wherein the first set of radio configurations includes only a subset (SHO between RS-1 and RC-1, and RS-2 and RC-2, col. 6, ln. 28) of the second set of radio configurations (RS-1 and RS-2, col. 6, ln. 25), as recited in claim 9.

A person of ordinary skill in the art would have been motivated to employ Czaja in Hottinen in order to obtain some same channel bandwidth and compatibility. The suggestion/motivation to do so would have been to provide a soft handoff between inter-generation/two different generations of CDMA systems. Czaja, co. 2, ln. 21-22, ln. 45; see also col. 3, ln. 41-43. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Czaja and Hottinen to obtain the invention as specified in claims 8 and 9.

With regard to claim 18, Czaja also discloses

changing (performing a true SHO, col. 6, ln. 37-40) the radio configuration used for communications between the first base station and the wireless terminal to the common radio configuration (a true SHO between RS-1 and RC-1, and RS-2 and RC-2, col. 6, ln. 28), and then

communicating (performing a true SHO, col. 6, ln. 37-40) between the second base station and the wireless terminal according to the common radio configuration (a true SHO between RS-1 and RC-1, and RS-2 and RC-2, col. 6, ln. 28),

as recited in claim 18.

With regard to claims 27 and 28, Czaja also discloses

wherein the radio configuration control circuit (common base station controller 121 in Fig. 12) is operative to command the wireless terminal (mobile station 124 in Fig. 12) to communicate with the first (first base station BS1 in Fig. 12) and second (second base station BS2 in Fig. 12) nodes according to the identified common radio configuration (a true SHO between RS-1 and RC-1, and RS-2 and RC-2, col. 6, ln. 28) responsive to identification of the common radio configuration, as recited in claim 27; and

wherein the radio configuration control circuit (common base station controller 121 in Fig. 12) is operative to receive a request (col. 7, ln 39-42) from the wireless terminal (mobile station) to communicate with the first base node according to the common radio configuration (col. 7, ln. 55-58) and to responsively cause the first node to change the communications with the wireless terminal to conform to the common radio configuration, as recited in claim 28. See also col. 7, ln. 33-60.

With regard to claims 33 and 34,

wherein the radio configuration control circuit (common base station controller 121 in Fig. 12) is operative to cause the transceiver circuit (base stations) to transmit a request to simultaneously (IS-95A/B-IS-2000 overlay area, col. 7, ln. 36) communicate with the first (first base station BS1 in Fig. 12) and second (second base station BS2 in Fig. 12) nodes, as recited in claim 33; and

wherein the radio configuration control circuit (common base station controller 121 in Fig. 12) is operative to cause the transceiver circuit (base stations) to simultaneously (IS-95A/B-IS-2000 overlay area, col. 7, ln. 36) communicate with the first (first base station BS1 in Fig. 12) and second (second base station BS2 in Fig. 12) nodes responsive (reports their strength, col. 7, ln. 41) to a command received by the transceiver circuit , as recited in claim 34. See also col. 7, ln. 33-60.

14. **Claims 20 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen and Kanerva as applied to claim 19 above, and further in view of Bender.

With regard to claims 20 and 21, the combination of Hottinen and Kanerva discloses a method according to 19. However, the combination explicitly show receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal; and processing the first and second signals according to a common process, as recited in claim 20; and wherein receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal comprises receiving a composite signal including the first and second signals; and wherein processing the first and second signals according to a common process comprises processing the composite signal according to a RAKE process, as recited in claim 21.

In an analogous art, Bender disclose a rake receiver to demodulate two separate signals from two different base station and the two signals are combined to yield a

composite signal (receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal; and processing the first and second signals according to a common process; and wherein receiving first and second signals transmitted from respective ones of the first and second nodes at the wireless terminal comprises receiving a composite signal including the first and second signals; and wherein processing the first and second signals according to a common process comprises processing the composite signal according to a RAKE process) (col. 1, ln. 27-30.

A person of ordinary skill in the art would have been motivated to employ Bender in Hottinen and Kanerva in order to obtain a receiver receiving two signals and a common process using RAKE. The suggestion/motivation to do so would have been to provide a smooth soft handoff and better quality signal. Bender, col 1, ln. 24-36. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Bender, Hottinen and Kanerva to obtain the invention as specified in claims 20 and 21.

15. **Claims 22 and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hottinen in view of Tiedemann Jr. (U.S. Pat No. 5,926,470).

With regard to claims 22 and 44, Hottinen discloses the system according to claim 40. However, Hottinen fails to explicitly show performing a hard handoff from the first base station to the second base station if a common radio configuration is not available, as recited in claim 22.

In an analogous art, Tiedemann discloses a system and method for determining the regions within the coverage area where hard handoff is both necessary and likely to be accomplished successfully and to which of the base stations should the hard handoff be attempted (performing a hard handoff from the first base station to the second base station if a common radio configuration is not available) (col. 12, ln. 33-37).

A person of ordinary skill in the art would have been motivated to employ Tiedemann in Hottinen in order to obtain hard handoff. The suggestion/motivation to do so would have been to provide "intersystem" handoffs when resources are not available to conduct intersystem soft handoffs. Tiedemann, col. 3, ln. 55-57. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Tiedemann and Hottinen to obtain the invention as specified in claims 22 and 44.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lin (U.S. Pat No. 6,542,744) discloses handoff in a cellular network using transceiver 1411.

Mimura (U.S. Pat No. 6,021,123) discloses soft handoff affected by a plurality of frequencies of a CDMA system that are divided into two groups and commonly assigned to all the base stations.

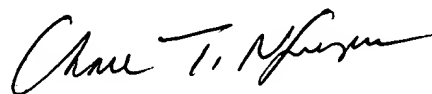
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 703-305-8963. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BW

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June 18, 2004



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